

862.1329 DII

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	:	Examiner: Alicia Chevalier
Kazutaka TAKEUCHI, et al.	)	
	:	Group Art Unit: 1772
Appln. No.: Unassigned (Divisional of	)	
Appln. No. 09/199,344 filed	:	
November 25, 1998)	)	
	:	
Filed: August 23, 2001	)	
	:	
For: METHOD OF	)	August 23, 2001
MANUFACTURING TUBULAR	:	
FILM (AS AMENDED)	)	

Commissioner for Patents  
**BOX PATENT APPLICATION**  
Washington, DC 20231

PRELIMINARY AMENDMENT

Sir:

Prior to examination on the merits, please amend the above-identified application as follows:

IN THE TITLE:

Please amend the title to read as follows:

--METHOD OF MANUFACTURING TUBULAR FILM--

IN THE SPECIFICATION:

Please insert the following new paragraph on page 1 before line 1.

--This is a divisional application of Application No. 09/199,344 filed November 25, 1998, which is a divisional application of Application No. 08/552,932, filed on November 3, 1995, now U.S. Patent No. 5,944,930.--

Please substitute the paragraph starting at page 21, line 24 and ending at page 23, line 2 with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--The heating conditions in the heating oven 60 were that the heating temperature was  $370 \pm 5^{\circ}\text{C}$  and the heating time was  $30 \pm 1$  min. The heating time was determined by taking account of the melt temperature (melting point) of the film material and the heat deterioration of the film. During the heating step in the heating oven 60, the film 4 changed as shown in Figs. 6 to 8. First, the film 4 placed in the heating oven 60 was wound in the gap between the columnar member 1, as a core, and the tubular molding member 2, and the two ends 4a and 4b formed the overlapping portion. The dimensional gap between the outer diameter of the columnar member 1 and the inner diameter of the tubular molding member 2 was  $200\text{ }\mu\text{m}$ . The columnar member 1, the film 4, and the tubular molding member 2 were heated from this state, and the temperatures of these members rose. The columnar member 1 and the tubular molding member 2 began expanding in accordance with the respective thermal expansion coefficients (Fig. 6). The film 4 started softening as the temperature rose, and the columnar member 1 and the tubular molding member 2 started expanding with the temperature rise. However, since the thermal expansion coefficient of the aluminum material of the columnar member 1 was

larger than the thermal expansion coefficient of the tubular molding member 2, the dimensional gap between the outer diameter of the columnar member 1 and the inner diameter of the tubular molding member 2 was narrowed from that in the initial low-temperature state (Fig. 7).--

Please substitute the paragraph starting at page 36, line 23 and ending at page 37, line 12 with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--The first sheet film 28 was wound double on an outer circumferential surface 26a of the columnar member 26 such that two ends 28a and 28b of the film overlapped each other. Subsequently, the second sheet film 32 was wound double on the first sheet film 28 such that two ends 32a and 32b of the film 32 overlapped each other. Double-winding of this embodiment has the merit of being able to form a tubular film with an arbitrary thickness independently of the thicknesses of the sheet films. Additionally, when a 50- $\mu$ m thick film is not used but a film having a half thickness, i.e., a thickness of 25  $\mu$ m is used as the sheet film, the thickness of the overlapping portion of the two ends of the film becomes small, so it is possible to manufacture a film having a high uniformity in the overall film thickness.--

IN THE ABSTRACT:

Please replace the Abstract of the Disclosure with the following:

--ABSTRACT OF THE DISCLOSURE

A method of manufacturing a tubular film includes the steps of: winding a thermoplastic sheet film on a columnar member with at least two turns so that leading and trailing ends of the film are placed approximately on one normal line of an outer surface of the columnar member without overlapping each other; fitting a tubular molding member on the wound film; and connecting the leading and trailing ends of the film by heating at least the film, thereby forming the sheet film into the tubular film. The resulting tubular film has a high film thickness uniformity and suitable for a fixing film of an image forming apparatus.--

IN THE CLAIMS:

Please cancel Claims 1 through 68 without prejudice to or disclaimer of the subject matter recited therein.

Please add Claim 69 to read as follows.

--69. (New) A method for making a tubular film comprising the steps of:  
winding a thermoplastic sheet film on a columnar member with at least two turns so that leading and trailing ends of said film are placed approximately on one normal line of an outer surface of said columnar member without overlapping each other;  
fitting a tubular molding member on said wound film; and  
connecting the leading and trailing ends of said film by heating at least said film, thereby forming said sheet film into the tubular film.--

### REMARKS

This is a divisional application of Application No. 09/199,344 filed November 25, 1998 (the “‘344 Application”), which is a divisional of Application No. 08/552,932 filed November 3, 1995 (the “‘932 Application”), U.S. Patent No. 5,944,930.

**NOTE:** A Petition for Extension of Time for an additional one-month period for response is being filed concurrently herewith in the ‘344 Application to extend the time for response to the outstanding Official Action therein, to August 27, 2001, and thereby maintaining the pendency of that application and establishing copendency of the above-identified divisional application with the ‘344 Application. A signed, duplicate copy of that Petition for Extension of Time is enclosed herewith.

Claim 69 is pending in the application. Claims 1 through 68 have been cancelled without prejudice. Claim 69 has been added and corresponds to Claim 70 (as correctly renumbered by the Examiner) which was added in an Amendment Filed March 21, 2001, in the ‘344 Application. Claim 69 is the only independent claim.

A copy of a Petition for Extension of Time, which is being filed concurrently herewith in the ‘344 Application, is enclosed. The specification has been amended to include the amendments made in a Preliminary Amendment, filed November 25, 1998, in the ‘344 Application. A new title and an Abstract has been provided to more clearly conform to the claim on file. It is respectfully submitted that no new matter has been added.

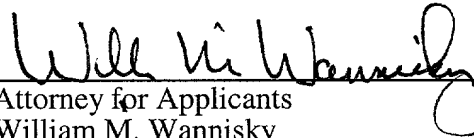
Applicants claim priority under 35 U.S.C. § 119 based upon Japanese Priority Application Nos. 6-273615, filed November 8, 1994, and 7-271079, filed October 19, 1995, and respectfully request acknowledgment of this claim and of receipt of the certified copies of the priority documents, which were filed April 8, 1996, in the ‘932 Application.

Favorable consideration hereof is respectfully requested.

Applicants submit that this application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

  
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